DOCUMENT RESUME

ED 132 639 CS 501 583

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TITLE Risky and Conservative Shifts in Interpersonal Communication: An Overview and Bibliography.
PUB DATE 76
NOTE 42p.; Paper presented at the Annual Meeting of the Texas Speech Communication Association (Austin, Texas, October 7-9, 1976)

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS Behavior Theories; Bibliographies; *Communication (Thought Transfer); *Decision Making; Group Behavior; *Group Discussion; Group Dynamics; *Interpersonal Relationship; *Shift Studies

ABSTRACT

Discussion and research show that when members of a problem-solving group engage in discussion and reach a consensus, the resultant group decision is either riskier or more cautious than the average of the individual judgments prior to the discussion. The purpose of this paper is to summarize and evaluate various theories concerning this group shift, whether conservative or risky. Aspects of shift considered are the reasons for studying group shift, the choice-shift phenomenon, personality constructs, and group impact. A bibliography lists more than 170 items related to interpersonal decision making. (JM)

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RISKY AND CONSERVATIVE SHIFTS IN INTERPERSONAL COMMUNICATION: AN OVERVIEW AND BIBLIOGRAPHY

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If members of a problem-solving group engage in discussion and reach consensus reflecting a higher level of risk than the average of their individual decisions prior to group interaction, the risky-shift phenomenon has occurred. Such was the argument made by Stoner (1961) in his masters thesis. Following Stoner's study, the initial interest in the phenomenon of group-induced shift toward increased risk taking arose because it flew in the face of two alternative and plausible expectations for group outcomes: The hypothesis of an averaging effect, and the hypothesis of a shift toward conservatism (Whyte, 1956) through group conformity pressures. When Stoner reported discovering a shift toward a position which was riskier than the individual decisions prior to discussion, he set off a myriad of studies into what has been called the risky-shift phenomenon.

The purpose of this paper is to summarize and evaluate various theories. The result of risky-shift discussion and research has been to refute the prevalent belief that group pressures and norms press for conformity in such a way that the final outcome would be the average of individual judgments prior to discussion. Contrary to this expectation, the shift results in a group decision which is either riskier or more cautious than the average of the individual judgments prior to the discussion.

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Why is the study of group shift important?

A shift, whether conservative or risky, has substantial importance for individuals interested in interpersonal communication, and most specifically in group problem-solving. The fundamental concern is whether groups can produce riskier decisions than individuals alone. Moreover, the research argues against the theory that group decision-making produces conformity pressures which in turn produce moderate compromises rather than bold shifts away from the average, individual predispositions prior to discussion. To discover without reservation, as Whyte suggested, that groups were less risky than individuals would sorely affect the importance of group decision-making as a vital force in human interaction.

Secondly, the research has produced important by-products revealing the process of decision-making. Through an extensive literature many variables of group behavior have been tested. The by-products of this investigation include the importance of leadership, the diffusion of responsibility under risk situations, the importance of the cultural value of riskiness, and the role of norms and subjective expected utilities in the decision-making process. Through the study of risk, the ingredients of decision-making have become somewhat clearer. At least one critic of risky-shift research, Cartwright (1971), has emphasized the need to keep risky-shift studies focused on the variables of group decision-making and on improving the methodologies used in the research (1973). It is the group process, not the singular question of a choice shift, which should guide research. Otherwise, the research comes to be what M. Brewster Smith (1972) characterized as "an example of the fads engendered by aspects of our patterns of graduate training, publication, and academic advancement that serve a self-perpetuating priestcraft rather than the advancement of science."

What is the choice-shift phenomenon?

The choice-shift phenomenon is operationalized when individual preferences are determined for choices of various risk levels. Individuals are given a choice or series of choices. Usually these choices are those of the Choice-Dilemma Questionnaire or gambling. After individual levels of choice (based on probability of success and failure) are determined, the individuals discuss with others. After the discussion of the choices, the individual level (or if the group reached consensus, the group level) of risk is again determined and used to test for significant difference. If there is a significant difference in risk level, the choice shift has occurred.

One of the by-products from the original risky-shift study is the discovery that a group can shift toward risk or caution. The shift and the direction of the shift seem to be the products of several variables coming together in the decision-making context. The coaction of several variables accounts for the choice-shift phenomenon in this way: Choice shift, whether toward risk or caution, reflects value-of-risk as incentive aimed at maximizing subjective expected utility. The choice, which may or may not require group influence, is reflective of norms implicit in the choice situation. The presence of others, which is not essential, but which increases the magnitude of the choice shift, creates a shift in attitude toward the value of the problem outcome, an awareness of others' willingness to shift, and a directional flow of the preponderance of information and persuasive arguments.

What explanations are used to account for the choice shift?

After Stoner's seminal study, the researchers have focused on the nature of groups as the basis for explaining the causes of choice shift.

Consequently, the most fundamental question is whether the shift can occur without group involvement. The answer is, the shift can occur, but the magnitude of the shift is greater when created by group interaction. In early studies, Wallach, Kogan, and Bem (1962) and Marquis (1962) replicated Stoner's study and concurred that the choice level after group discussion is more risky than was the pre-discussion position taken by individuals. These results occurred whether the subjects were undergraduates, graduates, business students, humanities students, or middle management personnel. Subsequent studies have found risk in a variety of subjects such as: Children, teenagers, British college students, psychologists, psychiatrists, social workers, New Zealanders of a variety of age and occupational groups, personnel from the U. S. Department of Defense, mature middle management U. S. government officials, students in Germany, Ugandans, Students in Israel, and state trial judges.

As well as discovering a shift to greater risk, a cautious shift was found (Zajonc, 1968; Fraser, Gouge, and Billig, 1971). Such studies suggest that the willingness of groups to produce more or less risk than individuals alone is a function of the type of risk proposed and of variables involved in the problem under consideration (Cohen and Ruis, 1974). For instance, Reingen (1974), using product purchasing risk choices, failed to disclose a significant difference between group and individual levels of risk. Risk discovered by the Choice-Dilemma Questionnaire does not generalize to real life military decisions (Higbee, 1972). Nor is there a connection between general risk taking and ethical risk taking (Horne, 1972). Dunnette, Campbell, and Jaastad (1963) observed that "group participation is accompanied by certain inhibitory influences" which stifle creative thought. Thus, a shift

may or may not occur, and it may be toward risk or caution. Moreover, the apparent shift may result from individuals who make cautious decisions, but view these as being risky (Higbee, 1971).

One possible explanation for the variety of results is that the shift is a function of the experimental design. Writers have sought to determine the extent to which the phenomenon is actual or created by the experimental setting. Slovic (1962) failed to find convergent validity among the traditional instruments used for operationalizing and measuring risk. Clark and Willems (1969b), Willems and Clark (1969), McCauley, Kogan, and Teger (1971), Castore (1972), and Yinon (1974) argued that the instructions of the experimental setting and the experimental format account for part of the shift phenomenon. Clark and Willems (1969b) demonstrated that different items on the Choice-Delimma Questionnaire produce different degrees of risk shift and some instances of cautious shift.

MacKenzie (1971) argued that the Choice-Dilemma Questionnaire does not really measure risk because it does not follow a statistically accurate pattern of probabilities. As well, the apparent shift may be the result of "the original positions of the bettors being skewed in the risky directions" (Abelson, 1973b). Belovicz and Finch (1971) argued that risk is improperly conceptualized as desirability of consequences and the probabilities of consequences.

McCauley et al. (1973), Lafferty and Higbee (1974), and Higbee and Streufert (1969) argued that laboratory risk phenomenon does not generalize to real life situations. Peterson and Fulcher (1971) suggested that this generalization problem is sensitive to the type of decision being made. Other researchers acknowledge caution in generalizing, but, nevertheless, believe the phenomenon is applicable to real life decision-making.

Chapko and Solomon (1974) argued that the Choice-Dilemma Questionnaire creates a unique sensitivity to the expectation of others. Gaskell, Thomas, and Farr (1973) found that the experimental design influenced subject behavior through exposure to information about others' risk levels, and the opportunity to decide a risk level before discussion produced caution. Schellenburg (1974), attempting to replicate Gaskell's study, found some experimental sensitivity, but concluded that "effects of pretesting upon the group-induced shift toward risk are probably not substantial." Baron, Baron, and Roper (1974) doubted the significance of experimental impact, but as Vidmar (1974) concluded, all measures of risk may not be the same. Perhaps the amount of control which subjects perceive that they have over the decision outcome is the major variable influencing willingness to risk (Sinha and Yusuf, 1972). For these reasons, reservation must control the boldness of generalizations about the phenomenon of choice shift.

Personality Constructs

Several inconclusive attempts have been made to discover whether personality constructs interrelate with willingness to shift toward risk. Kogan and Wallach (1960) explored the correlation between levels of confidence and willingness to risk. Bruner and Tajfel (1961) suggested that cognitive styles were related to willingness to risk. Rim (1963) observed that "shifts in the risky direction are a function of a group process, in which Ss scoring high on NA [Need Achievement] shift relatively little, and Ss scoring low on NA shift more." Those high in NA serve as leaders and pull low NA's along. Rim (1964a) found that "Ss scoring high on Extroversion are riskier than other Ss in their initial scores." Individuals high on extroversion act as leaders to stimulate those who are moderate on neuroticism who are the

most easily influenced. Rim argued that personality characteristics of leaders and followers account for the shift. He (1964b) discovered that individuals high in toughmindedness and average on radical-conservativism are riskier in initial positions. These individuals also exert the most influence. In this way, leadership, risk, and personality traits are interrelated. A major weakness is that the model is totally dependent on leadership; without it, the shift cannot be explained.

Kogan and Wallach (1964) studied the contributory relationship between riskiness and certain mental constructs: Confidence of judgment, breadth of categorizing, extremity concerning judgments about external events, and extremity concerning self-referent judgment. They also (1967b) suggested that anxiety and self-image maintenance are tied to the need to share responsibility with others in risk situations. Taylor and Dunnette (1974) disclosed a connection between personal skills of decision-making, the seeking of information, and the willingness to risk. Hamilton (1974) found results which confirmed Atkinson's prediction that "people with high achievement motivation tend to approach moderate risks and those with high motive to avoid failure tend to avoid such risks." Especially for ethical problems, self-image poses criteria which shape the risk taking (Chapko, 1973).

Certain personality traits probably play a contributory role in producing or inhibiting willingness to risk. However, two problems exist in this regard. (1) The reliability of researching personality construct influence on risk is uncertain, and when this problem is coupled with the unreliability of other construct measures, the likelihood of experimental error is compounded. (2) Efforts have been insufficient to use the data generated in these studies to cross-reference personality constructs with other variables in risky-shift research.

Personality types of subjects may account for some experimental problems and could clarify other research results.

Group Impact

The Stoner study was built around group interaction, and this interest has been dominant in other research. The most fundamental question is: Can risk shift occur without group interaction? Secondly, what group variables account for the willingness or motivation to shift? These questions grow out of the very essence of group interaction and decision-making. As well as revealing the variables which produce risk, the studies suggest what group dynamics affect the decision-making process. It is important to the purpose of this paper to emphasize the group decision-making process because the best research suggests that group exchange of information, persuasive argument, and norm-centered interaction produce clarification of the consequences and utilities of choices. Along with the normative impact of cultural values, individual choices are influenced by group involvement. Time spent in making the decision and the amount of information shared seem to be crucial (Streufert and Streufert, 1968). Even if group interaction is not essential for shifts to occur, interaction increases the magnitude of shift.

Leadership:

The leadership of risk takers influencing more conservative members was one of the earliest explanations for the phenomenon. Wallach, Kogan, and Bem (1962) postulated that leadership and a shift toward risk are interrelated. As mentioned above, Rim discovered that leadership, personality traits, and shift to risk were interrelated. Many other researchers have discounted leadership as a major variable in the shift.

One of the primary methodological problems is the operationalization

of leadership which is defined as prevailing influence by one or more members of the problem-solving group. Without a reliable and valid instrument for determining leadership, any studies under this paradigm are suspect. One of the worst methodological mistakes is the appointment of a leader assuming that appointment makes someone a leader. Group shift has been found to occur without any definable leadership influence. Yet, if we define leadership as shared or diffused influence toward goal completion, no single individual may be identifiable as "the leader." Moreover, it cannot be assumed that risk-takers have different traits than others in the group. For instance, "the risky-shift phenomenon cannot be attributed to greater persuasiveness as a general characteristic of risk-takers" (Wallach, Koyan, and Burt, 1968).

The strongest connection between leadership and shift was reported by Boulanger and Fischer (1971). Operationalizing leadership through peer observation, the researchers produced these results: (1) "a significant shift in the risk direction for the risk-leader groups"; (2) "a significant shift in the conservative direction for the control group"; (3) "a significantly greater conservative shift for the caution-leader groups than the control groups." Although this study reveals the contributory impact of leadership, it does not isolate this variable from others, such as conformity, preponderance of persuasive argument, values, or expected utilities.

Leadership is, therefore, a contributory factor which may influence the total group decision-making effort. However, leadership is so situationally sensitive that other variables obviously contribute to group impact upon the choice shift.

Conformity:

A second major theory is that pressures toward conformity create the shift. Lonergan and McClintock (1961) discovered that conformity

pressure did not cause risk taking to decrease in group situations. Milgram (1965) disclosed that subjects would risk authority censure if peers supported their action.

A problem with this theory arises whenever conformity assumes a group averaging effect, that is, when the final, post-discussion position reflects the average of the initial positions. This traditional assumption methodologically eliminates conformity as a viable explanation of choice shift. An averaging effect is antithetical to a significantly different, directional shift away from the initial average of the group interactants. A more meaningful interpretation of conformity is pressure to follow a choice-specific norm (Burnstein, 1969) or as the product of adherence to a new frame of reference or attitude about the risk object (Castore and Roberts, 1972).

If conformity is involved in creating a willingness to risk, it cannot stand alone. It does not explain the shift away from the composite of individual positions. Doise (1969) observed that "the opinion of a group is more extreme than the average of the opinion of individual members of the group." He explained this by suggesting that leaders move the group opinion toward risk or caution; then through averaging, other members fall into line. This analysis, as was discussed above, depends upon reliable isolation of leadership.

Rather than leadership per se, emphasis on the role of the majority of group interactants seems to account for impact of group pressures. Cecil, Chertkoff, and Cummings (1970) discovered that conservative group members are shifted toward risk by a risk-taking majority, and the risk-taking members influenced toward conservatism by a conservative majority. Group pressures reflect the composite make-up of the group and the norms, values, and predispositions of the majority. Lamm, Trommsdorff, and Kogan (1970) found conformity pressures reflecting a

desire to avoid error. Group decisions aim to eliminate error and thus create a directional shift reflecting the predominance of pessimism or optimism prevailing among group members. In a very revealing study, Vidmar (1970) noted that "the risky shift is not a phenomenon which affects all members equally." Using three homogeneous groups composed of high, middle, and low risk members, and heterogeneous groups composed of members of all levels of risk, he concluded that heterogeneity is an important factor in willingness to risk. Group members, through shared commitments and after becoming familiar with the values of one another, produced a shift whereby the low and middle risk individuals moved most toward the risky position. Thus, conformity pressures reflect the dominant values of the group and the norms generated during discussion. This conclusion is suggested since the homogeneous low and moderate risk groups did not risk. The group interaction has to generate the expression of values and norms which can serve as the basis for conformity pressures away from the initial positions. In this manner, conformity is a covariant variable influencing choice shift.

Affective Bonds:

One of the early explanations of the shift phenomenon was that individuals become willing to risk because they establish affective bonds with others during group interaction. By this explanation, group interaction is essential to the shift. If the shift is found in the absence of group interaction, the theory lacks support. Wallach and Kogan (1965) believed that "affective interdependencies" "lead individuals to feel linked" "in a common fate." Wallach, Kogan, and Burt (1965) observed that group members were willing to risk when they saw others shifting their risk levels. Rettig (1966b) argued that ethical risk judgments reflected "censure testing" rather than affective bonds.

Certain weaknesses exist for the affiliative bond explanation.

Nothing inherent in the presence of affiliative bonds creates the propensity to risk. Risk has been found in the absence of affiliative bonds. Thus, the affiliation among group members may explain why they can feel comfortable in a mutual decision, but affiliation probably does not serve as a cause, but rather as a contributing factor which prompts greater magnitudes of shift.

Information and Social Comparison:

This theory is predicated on the assumption that individuals feel that they are more willing to risk than others. When they find others to be more willing to risk than was previously estimated, they are prompted to increased willingness to risk. Doubting the validity of this theory, Wallach and Kogan (1965) concluded that information given by others about their level of riskiness is insufficient to account for the shift. In contrast, Clark (1971) and Clark and Crockett (1971) found that because of the cultural value of risk subjects who heard others advocate riskier positions than their own shifted toward a higher level of risk, and those who heard more cautious positions than their own shifted toward caution. Implicit in the results of these studies is the impact of social comparison which unites with the value of risk to create a motivation to risk (Blank, 1968). Jellison and Riskind (1971) discovered that followers' perceptions of others' willingness to risk led to a similar willingness. Those who shifted were convinced that good reason prevailed for the risk or it would not have been advocated. Most individuals are moderate risk takers with a high idealized risk level. When esteemed others are willing to risk, individuals are motivated to follow. Jellison and Davis (1973) observed that moderate subjects attributed a high level of competence to others who were willing to risk. When subjects believed that risk was warranted, they followed. Burnstein and Vinokur (1973), Myers, Bach, and Schreiber (1974), and

Blascovich and Ginsburg (1974) found that social comparison coupled with persuasive information about the problem prompted willingness to risk. During discussion, individuals are exposed to persuasive arguments which were not available to them prior to discussion. This conception assumes that the advocates were held in esteem and that part of that esteem grew out of the value this society places upon risk taking. This conclusion is supported by others: Gaskell, Thomas, and Farr (1973), Davis et al. (1974), and Bauer and Turner (1974). Burnstein, Vinokur, and Pichevin (1974) said that the merit in persuasive arguments is more compelling than social comparison of others' level of risk. Vinokur and Burnstein (1974) suggested that information and persuasion comingle through the process of group decision-making. In addition to any perception of others' willingness to risk is the concomitant perception that the advocated position has merit and that over time discussion provides insight into advantages and disadvantages implied by the problem and its alternative solutions (Bennett, Linskold, and Bennett, 1973). Information, persuasive argument, and the credibility of those who are willing to risk interact to create motivation for others to shift.

Bateson (1966) and Flanders and Thistlewaite (1967) argued that the key to shift is increased insight. Bateson observed that "increased familiarization with the problems led to reduced cautiousness in dealing with them, which in turn led to the increase in riskiness." Moreover, familiarization may take place in a group or without group interaction. Flanders and Thistlewaite challenged the belief that group interaction is necessary for riskiness. Teger et al. (1970) in five studies and Bell and Jamieson (1970) failed to replicate Bateson and Flanders and Thistlewaite. The refutation argued that information about the nature of the problem must be coupled with group inter-

action.

Further refutation of the position held by Bateson and Flanders and Thistlewaite is created when the direction of shift is found to be consonant with the direction of the preponderance of agruments. Wallach and Malbi (1970) argued that information about a more risky position creates the likelihood that one will risk. Silverthorne (1971) observed that the shift to risk is consonant with the direction of the information and arguments used to discuss the problem. Ebbeson and Bowers (1974) observed that a greater proportion of conservative arguments causes a cautious shift.

Substantial data and argument suggest that the shift, whether risky or cautious, is produced by the preponderance of arguments and by the social comparison based on a belief that others of esteem have substantial reason for recommending the shift. The arguments may either be informative about the problem or persuasive about the risk level. Whether the group is necessary for the shift, some sort of interaction probably is. Basic to the interaction is social comparison and evaluation in a decision-making framework. To an extent, the shift may even be accompanied with a diffusion of responsibility whereby the decision is easier because others share in it.

Diffusion of Responsibility:

Several researchers have explored the possibility that risk is a function of the willingness to diffuse among others the responsibility for choices. Dion, Baron, and Miller (1970) observed that "diffusion of responsibility assumes that fear of failure primarily deters an individual's tendency to take risks. Group decision-making, in contrast to individual decision-making, presumably diffuses responsibility among the group members. This diffusion of responsibility reduces fear of failure and thereby enables people to make riskier decisions."

Wallach, Kogan, and Bem (1964) discovered the impact of responsibility on the shift when they asked subjects to be responsible for the welfare of others when advocating a level of risk. Assuming responsibility for the impact of risk levels upon others was found to yield a conservative shift. From this observation, they argued that only when responsibility can be diffused can there be a willingness to risk. Bem, Wallach, and Kogan (1965) found that diffusion of responsibility allowed a group shift in a risk situation where increased pain was offset by increased monetary reward. Kogan and Wallach (1967d) connected self-image maintenance and diffusion. In one of the most direct examinations of the theory, Cummings and Mize (1969) explored the theory than interpersonal diffusion was a manifestation of intrapersonal salience of personal responsibility. They concluded that persons perceiving low salience of personal responsibility were most likely to risk.

During the mid-sixties, starting with Brown (1965), a battle between information and diffusion positions was waged. Lamm (1967) discovered that through information exchange, without face-to-face interaction and thus without diffused responsibility, the risky shift could occur. Blascovich (1972) revealed that individuals could be risky without group interaction; thus, he argued, the value of risk was motive sufficient to create the shift. Flanders and Thistlewaite believed that processes of "increased comprehension" "whether alone or in groups" accounted for the shift. Kogan and Wallach (1967c) found that face-to-face interaction was not necessary; interaction over intercoms produced the shift, although group interaction produced a higher magnitude of shift.

Wallach, Kogan, and Burt (1967) found a connection between group interaction, field dependency, and magnitude of willingness to risk.

Kogan and Wallach (1967b) argued that high anxiety, group interaction, and willingness to shift were interrelated. Yinon, Jaffe, and Feshback (1975) disclosed that the shift resulted through diffusion even when risk is not a value.

Despite these results, the most damaging challenge to the diffusion theory is the discovery that groups may shift toward conservative positions as well as toward risk. Pruitt and Teger (1969), using group interaction, wagering, and commitment to being responsible for the consequences of the choice, found a shift toward caution. Hartnett (1971a) observed that threatening to subject group decisions to scrutiny of others produced a conservative shift. Interaction should have diffused the responsibility and moved the group to risk. Myers, Murdoch, and Smith (1970) found no connection between anxiety and risk. Howard and Crano (1974) suggested that the presence of others in a risk situation decreases rather than increases risk. Baron, Roper, and Baron (1974) observed that group interaction produced a conservative shift when subjects were asked to contribute to a relief fund. They argued that the interactants felt less responsibility when others were present. Schroeder (1973) found that even when subjects see themselves as equally risky, they nevertheless see themselves as more altruistic.

Diffusion of responsibility is a difficult topic to analyze because it resists direct observation. As a phenomenon, it probably prevails to some extent in groups, but it is an insufficient explanation for risk taking. It fails to account for the willingness to risk as opposed to remain at a moderate level of risk or to move in a cautious direction. Zaleska and Kogan (1971) regreted that diffusion and risk-as-value are often at odds. They argued that choice for others is cautious whereas choice with a group is more risky. The first outcome reflects value, the second diffusion. If value of risk were to accompany diffu-

sion, the two would work together to account for the phenomenon, the first as motive and the second as facilitating environment. Nevertheless, diffusion of responsibility, at best, is a concomitant factor which allows, rather than motivates, a willingness to risk.

Risk-as-value:

One of the most persistent themes in risky shift research is the belief that risk is culturally valued, and because it is valued, individuals are motivated to risk. Brown (1965) argued that proponents of risk in group interaction are influential on the group outcome. They are influential because they cause the sharing of relevant information, they set a norm of willingness to risk as a cultural value, and they are norm deviants. This position has been corrected by many studies, but it retains its basic persuasiveness.

Four variables seem to stand out in the discussion: (1) Perception of others' willingness to risk, (2) group norms which serve as values, (3) use of values in group decision-making, and (4) value decisions reflecting the effort to maximize subjective expected utilities.

As discussed above, to exhibit a shift, groups must deviate from the average of individual preferences prior to discussion. The direction of discussion--whether toward risk or caution--is compelling. At the basic level of the nature of risk, group shift to caution seriously challenges the cultural value theory. If a cultural value of risk exists, the shift should never be toward caution. But, if the value is approached from the viewpoint of the maximization of outcomes which may be either more or less risky, then value as a part of the discussion becomes the normative basis for decision-making which can produce shifts in either direction. Whereas risk is a cultural value, so is caution if the circumstances of the problem dictate. Koger

and Briedis (1970) argued that situational circumstances plus "exposure to social norms of risk and caution produced risky and conservative decisions respectively." Without such exposure, no shift occurred. Rabow et al. (1966) argued that norms influence risk. When choice dilemmas were framed for "members" of subjects' families, the shift was toward caution. "There is, in a word, social support for the person who exercises caution or takes risks. The support, however, is related to the circumstances involved or specifically related to the problem under discussion." Stoner (1968) concluded that "group decisions tended to be more cautious on items for which widely held values favored cautious alternatives and on which subjects considered themselves relatively cautious." In this manner, values mediate decisions (Moscovisi and Zavalloni, 1969). Alker and Kogan (1968) found that "groups converging on norm-maintaining alternatives become more risky, those converging on norm-violating alternatives become more conservative."

Teger and Pruitt (1967) and Myers and Bishop (1971) discovered that the extent of risky shift on a decision problem was found to be positively related to the initial level of risk on that problem. However, Vinokur (1969) failed to replicate these results.

Madaras and Bem (1968) found that risk-takers are more highly regarded than are conservative counterparts. Wallach and Wing (1968) observed that individuals become riskier when they perceive that others are more risky. Moreover, the riskier group members exert influence through persistance (Maehr and Videback, 1968). This persistance may be due to individuals competitively trying to be more willing to risk than others in the group (Willems, 1969; Levinger and Schneider, 1969; and Lamm and Kogan, 1970). Schroeder (1973) and Schulman (1973) differed with Levinger and Schneider arguing that positions most admired do not

influence willingness to risk.

The conclusion that individuals competitively seek to be more risky reinforces the social comparison theory which argues that when people perceive others as being more willing to risk they in turn are more willing to risk. Jellison and Riskind (1970) suggested that willingness to shift is tied to social comparison based on "an ability to be indicated by risk, and that this ability be salient and valued by the persons in the risk-taking situation." However, Clark, Crockett, and Archer (1971) found the shift even when individuals were not allowed to disclose their level of risk. This, however, does not mean that the other interactants could not infer the risk level by listening to others' arguments.

Zajonc et al. (1969) and Johnson and Andrews (1971) found that groups became conservative when they placed a greater importance on avoiding being wrong than on being right. This line of argument challenges the cultural value of risk position; however, it supports the theory that values are used in a decision-making framework which may push groups to minimize loss as well as to maximize gains. For this reason, the decision-situation elicits values which guide the decision-making process (Dion, Baron, and Miller, 1970; Blitz and Dansereau, 1972; and Pruitt and Cosentino, 1975). Through the information about others' willingness to risk and through the urging of those exerting leadership, culturally salient values are brought to play upon the decision. Through this process, a shift can occur in either direction.

A major problem with this line of reasoning is that it does not explain why the decision does not reflect the average of individual positions prior to interaction. Willems and Clark (1971) partially

solved this problem when they argued that the shift occurs because "(a) the risk preferences in an assembled group are distributed across several values, (b) the group process provides information to participants concerning their relative position in that distribution, (c) some Ss discover that, within that distribution, they are not actualizing the value of being at least as risky as their peers, and they shift toward greater risk." The same shift could occur for a prevailing sentiment of conservatism. For this reason, heterogeneous groups will risk more than homogeneous ones.

The effort to maintain self-esteem rather than to gain social esteem is the basis for comparison of willingness to risk (Lamm, Schaude, and Trommsdorff, 1971). The effort to maintain self-esteem is manifested in the objective of maximizing the utility of each choice (Pruitt, 1971a; Pruitt, 1971b; Clark, 1971; and Hartnett, 1971b). The desire to maximize utilities can create a shift to caution (Lupfer, 1971) which follows cultural values. Therefore, the possibility of loss in wagering can produce caution (Lupfer, et al., 1971).

Conformity can be sufficient to overrule shift in the direction of culturally approved value (Baron, et al., 1971). However, subjects "who deviate in a culturally valued direction are relatively reluctant to acquiesce to conformity pressure" (Baron, Monson, and Baron, 1973). Arguments, toward conservatism or risk, overcome willingness to risk as a value. The shift direction was toward that of the dominant arguments (Murninghan and Castore, 1975). Norms prevalent in the decision-making situation create a propensity for directional shift (Reingen, 1973).

Persuasive argumentation may be a variable in the normative use of problem sensitive values because it makes the appropriate values

salient to the discussion (Morgan and Aram, 1975). Burnstein, Vinokur, and Pichevin (1974) emphasized the notion that "extreme choices are admired not because they display maximal adherence to a social ideal but because they imply that the person's solution to a problem involving choice is well-founded, that he has persuasive reasons for the choice." Moreover, "during discussion a member is exposed to persuasive arguments which prior to discussion were not available to him." (Burnstein, Vinokur, and Trope, 1973)

Blascovich, Ginsburg, and Veach (1975) saw the value of risk as an intraindividual motivation variable which unites with a learning process about the risk problem. The value impels the risk and the learning process facilitates it (Blascovich, Ginsburg, and Howe, 1975).

From this survey of risk-as-value material, the following summary is appropriate:

(1) The perception of others' willingness to risk is not a singular motive to risk. Rather, the willingness to risk suggests that those willing to risk have good reason for that willingness. Moreover, the persuasive arguments by those willing to risk or favoring caution make appropriate values salient and therefore influence others to shift.

(2) During the discussion, interactants become aware of other's willingness to risk. Those willing to risk are motivated by the cultural value of risk to disclose that willingness. The cultural value to risk is most appropriately viewed as esteem placed upon the maximization of utilities.

(3) This sharing of ideas is important to decision-making which may lead to risk or caution. The direction of the shift coincides with the group conformity pressures to comply with norms implicit in the alternatives. The norms are problem sensitive

and reflect the desire to maximize subjective expected utilities.

Subjective Expected Utilities:

This summary of risk variables indicates the direction research has taken to the point where the best current thinking focues on subjective expected utilities (SEU). The theory goes back to Atkinson (1957) who suggested that decisions reflect motives to succeed or to avoid failure. Thus, it can be argued that society places a premium upon the best choice--the choice which produces the most utility. Those who are willing to shift--toward risk or caution--and who hold others' esteem because they can show the persuasiveness of their arguments are most likely to influence others' judgments.

Marquis and Reitz (1969) conducted the first major study to explore the possibility that the "effect of group discussion is to clarify the expected value, and to shift the choice more risky or more cautious on this basis." Therefore, risk is an incentive tempered by caution. Depending upon the nature of the risk problem, norms become salient which control the direction of the choice shift. Discussion clarifies the subjective expected utilities and moves the choice in the resultant direction.

Burnstein et al. (1971) suggested that discussion maximizes risk by creating the likelihood of more information and persuasive arguments aimed at clarifying the subjective expected values of each choice. During the discussion, all members have a roughly equal chance of discovering arguments which may clarify the subjective expected utilities of each choice (Vinokur, 1971b). This theory agrees with others mentioned above which find that directional shifts follow the preponderance of argument for or against risk. The arguments clarify the utilities and produce the directional shift.

Ferguson and Vidmar (1971) argued that risk taking is "the result

of a rational decision rule based on subjective expected utility." The direction of discussion was the same as the direction of the shift (Vinokur, 1971a; Burnstein and Katz, 1971; and Shanteau, 1974). Accordingly, individuals value risk, as well as caution, and through a comparison of others, judgments are persuaded of the expected utilities of certain choices (Kahan, 1975). Group interaction is not necessary for the shift, because whether making the decision as individuals or as interactants in groups, subjects tended to focus more on the expected utilities of choices (Vinokur, Trope, and Burnstein, 1975). "Discussion does not elicit new arguments . . . which have not already been considered privately before discussion." "The impact of arguments, their direction of influence, was correlated with the actual shifts in choice at the group level." The impact of the argumentation is to create a directional shift in the attitude toward the alternative under discussion. The shift in attitude toward the object of choice may be favorable or unfavorable, toward risk or caution. Basic to the attitude is the likelihood of maximizing expected utilities.

The shift may occur as a result of individual decision-making, but through group interaction, the magnitude of shift, as a product of increased insight into the nature of the choice and the development of an attitude toward the choice, is larger than it would be for an individual.

Conclusion and Implications

So far, rather than developing independent rationale to explain the phenomenon, risk-shift research has followed or reflected other prevailing theories of group interaction, sociology, and social psychology. Too often, the research focuses on the explanation of the risk-shift rather than on the dynamics of group interaction to more

fundamentally theorize about them. This trend of drawing from other theoretical positions will probably persist, thereby limiting the real impact of risk-shift theory-building. Nevertheless, the research has practical value. Insight into the process of generating risky or cautious decisions has implications for advising the practical use of group decision-making.

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